

VARNISH, AND THE MATERIALS USED IN ITS MANUFACTURE.

By Z. T. ANSTETT, PH.G.

A great many varieties of varnish are produced now in order to satisfy the demand for its use in the various special branches of industry, and are in almost all cases made by the solution of various resins in some solvent which will evaporate after the article is applied, thus leaving the resin deposited on the surface as a thin and even coating. The characteristics of a good varnish are that it should remain brilliant after the evaporation of the liquid medium, and present a dry, hard surface, instead of a greasy and tarnished one. It should also adhere closely to the surface to which it is applied, and not be liable to scale off when it becomes dry, even after the expiration of a long time; beside these qualities, it should become as hard as possible, without becoming brittle.

The principal solvents used in the manufacture of varnish are linseed oil, oil of turpentine, and alcohol, and the chief resins used are copal, amber, mastic, sandarac, lac, elemi, dammar, anime, and caoutchouc. Besides these, gamboge, aloes, dragon's-blood, and saffron are used as coloring matter.

Varnishes are classified as ether spirit varnishes, volatile oil varnishes, and fixed oil varnishes. Ether varnishes are very little used. Spirit varnishes are usually made with alcohol, and are produced in great variety. The best spirit varnish is made by simply digesting the resin in the alcohol, allowing it to evaporate in the sun or shade to the proper consistency; but this plan is too slow to satisfy the exigency of our modern industry, though it produces a varnish having the least amount of colour. A more rapid process is heating the varnish over a water bath or the fire, and this changes the colour very materially, but being the most rapid process it is generally employed. Oil of turpentine is the volatile oil generally used in the manufacture of varnish, and it is chiefly used in copal varnish. Spirit varnishes are injured by being kept too long, while turpentine varnishes, on the contrary, are improved by keeping, a more intimate union taking place between the resin and the oil. Linseed oil and poppy oil are sometimes used with copal or amber to make fixed oil varnishes, and this class, although lower in drying than the others, leave more residue, and are therefore more durable and better adapted for resisting the action of the elements. For interior work they are also considered the best, where colour is no objection, since they can be washed over without injury. Oxide of lead (litharge) is sometimes used to facilitate drying.

Copal being harder to dissolve than most resins, a special process is employed in manipulating it. The resin is first melted over an open fire till perfectly liquid, when linseed oil, heated to about 400° F., is added, and then oil of turpentine, to bring the varnish to the proper consistency. The linseed oil does not combine with the resin, but simply mixes mechanically with it, having the particles separated so as to combine with the oil of turpentine, which should be added slowly so the mixture can take place by degrees. The state of the weather must be taken into consideration when making varnish, since when it is damp they absorb sufficient moisture to greatly impair their brilliancy. The consumption of varnish is now very great, and constantly increasing, which is due to the greater number of purposes to which it is applied, while the increase of wealth naturally develops the taste for articles of luxury. The taste, too, for the use of natural woods in our houses and furniture, and the consequent discarding of the use of paint, have much to do with increasing the consumption of varnish. To give the reader some idea of this business, I will simply give the statement of one manufacturer as furnished to me. This factory consumes annually over 600,000 pounds of copal and shellac, and over 300,000 gallons of alcohol, linseed oil, and oil of turpentine, producing, with other ingredients of less consequence, nearly 400,000 gallons of varnish.—*Druggists' Advertiser.*

Home Topics.

BY FAITH ROCHESTER.

The Preparation of Coffee.

I have just now read the recipes for making coffee, given in "Common Sense in the Household." I have written some good words about this receipt book, but I can not advise young housekeepers to follow Marion Harland's directions for making coffee. I think that any one who cares for the true flavor of coffee—that "delicious aroma" which escapes so easily—would prefer to see a common tin

coffee-pot on the table, containing the infusion just as it had reached the point of perfection over the fire, rather than have the hot coffee poured into another coffee-pot, however rich or handsome, before serving. I do not know how the beverage can be turned into a silver, china, or britannia coffee-pot without considerable waste of aroma. By many coffee drinkers the aroma, is valued more than the "body." Such persons do not like to have the coffee boiled at all. Care should be taken to preserve the "aroma" while endeavoring to secure good "body." As the latter is secured by boiling, while the former escapes with the steam during the boiling process, it is a good idea to reserve a portion (say one-third or one-fourth) of the coffee prepared for the pot, (with egg or otherwise), while boiling the rest of it, putting it into the coffee-pot as that is drawn away from the hottest part of the stove or range, to some position where it will keep hot without boiling. There are various patent coffee-pots or coffee-filters, made with a special view to the preparation of clear and excellent coffee, without any special art on the part of the cook.

How to make the coffee turn off from the grounds clear, is a puzzle to some inexperienced or stupid cooks. I suppose that the most common course is to clear the coffee with egg. Some crush the whole egg, and mix the ground coffee with it, shell, yolk, and white together. Others use the white and shell, leaving out the yolk. This is Marion Harland's direction, and she advises us to beat the white of egg first. I don't see the need of it, and I never could imagine what good the shell does. Many of the eggs which come from market, and as many which come from our own hen's nests, are decidedly soiled upon the surface, and should be washed before going into any food or drink. That is one reason why I should leave out the shell.

The principle involved seems simple. The more finely the coffee is ground, the more thoroughly can its properties be extracted by a brief boiling. But the finer the ground coffee is, the less does it incline to settle to the bottom of the coffee-pot, and the "muddler" is the beverage, unless some art be used to "settle" the coffee. Break an egg at one end so as to pour out the white, retaining the yolk in the shell. Mix the white well with the ground coffee, and if it is not sufficient to wet it all, add just enough water to dampen the whole, stirring it thoroughly together. Put this into the coffee-pot, and pour boiling water over it, (one pint to each two tablespoonfuls of coffee. Miss Beecher says; Marion Harland says one quart of water to half a pint of ground coffee, afterwards adding a cup of cold water); and the egg is immediately cooked, so as to retain all of the fine coffee grounds in its meshes. If this is properly done, no addition of cold water or anything else after boiling, is necessary to produce clear sparkling coffee. I have often admired the work of the egg in clearing coffee, as I have removed the spongy ball of egg and coffee when cleaning the coffee-pot. It is evident that many housekeepers do not see the philosophy involved in this use of egg, or they would never for a moment suppose that the egg would clear the coffee satisfactorily if put into it at any time after the coffee and boiling water are put together. You want to bind the coffee grounds together with egg, not to add boiled egg to the beverage. Put in the yolk of egg if you like, but it is of no more use than so much water. I prefer to stir it well into the thickening for my cream or milk gravy, where it adds richness and nourishment, and beauty.

We can not always get an egg to settle coffee with, and few of us possess a French filter, or even an "Old Dominion" coffee-pot. This thing you can do—and I have done it many a time—tie the coffee grounds loosely in a thin bag. If the ground coffee is tied up in a tight bag, the water is slow in penetrating and extracting the properties of the coffee. When I use a thin, loose bag for the coffee, I stop up the nose of the coffee-pot, to retain the aroma as much as possible. If the coffee is ground coarsely it will settle itself, if allowed to stand without boiling a few minutes before serving, and then turned out without shaking. The addition of a half tea-cup of cold water when it is removed from boiling, will settle the grounds, but nothing is quite so good and sure as white of egg, if one

can not use a good patent coffee-pot.

Professor Biot, in his cook-book, directed the use of water which had *not been previously boiled*, as soon as it reached the boiling point. For breakfast coffee he advised four tablespoonfuls for a quart of water, for strong coffee eight spoonfuls to a quart, and for "black coffee" one pound to a quart. It is this "black coffee" which is used, I suppose, in making the celebrated

Cafe-au-lait.

This is black coffee added to boiled milk—a tablespoonful to a cup of boiled milk, making a strong cup of unusually delicious coffee, famous all over the world as French coffee. The milk must be sweet and nice, and slowly simmered to a thick creamy richness. In France it is sweetened with beet sugar. Mrs. Stowe says that this coffee is so black and strong as to be "almost the very essential oil of coffee." There is significance in the name of this drink, suggesting that the coffee should be added to the milk, not the milk poured into the coffee. I wonder if any one ever tried both methods without learning the great superiority of the former.

Browning the Coffee.

To make good coffee, it is essential to have the coffee beans evenly and sufficiently browned or roasted, without burning. They are spoiled if roasted until black, but a yellowish-brown is not right. A rich, dark, chestnut-brown is the right color. There are patent contrivances for roasting coffee, but I have not proved their merits. The beans should first be looked over, then put into a spider or dripping pan, and placed in a moderately hot oven, or upon the top of the stove. They brown evenly with less stirring if placed in the oven, than when over the stove, but this advantage is offset by the danger of forgetting the coffee entirely when out of sight in the oven. It must be stirred often.

Coffee and Health.

I seem to see the Editor shaking his head as he comes to this, but I will give you a few of my own thoughts on this subject, if I may be allowed. He shall have his coffee to the end of his days if he wishes it; and I, when he breakfasts here, will prepare for him most cheerfully, the best cup of coffee I can make from such materials as I can obtain.

But I shall be careful how I aid any young person to acquire the habit of coffee drinking. It certainly is perfectly safe, so far as health is concerned, to live without tea or coffee, either, or both. For many persons it is not safe to use either. Both tea and coffee possess medicinal properties. I see that Dr. Smith, in "Foods," speaks of them as "in some respects *antidotes to each other*," though he does not class either among "poisons." He relates, however, that drinking an infusion made from two ounces of coffee, caused him to fall to the floor and remain unconscious for several minutes. But I did not wish to treat the matter scientifically. I frequently hear persons who have no knowledge of the properties of coffee, assign as a reason for giving up coffee, that they found it injurious to them.

Only the other day a lady was telling me her new way of making coffee, from a mixture of scorched wheat-bran and molasses, and half the usual quantity of coffee. She told me why she made this instead of the strong coffee formerly used. First, the hired man complained of dizziness, and said he must give up coffee. He had learned by previous experience, that the dizziness came from the use of coffee. Soon after, the lady's husband complained of a frequent steady pressure upon the brain, which made it almost impossible for him to read at times. To the suggestion that it might be his coffee, he replied that "it was impossible, as he had always used coffee."—"But you will not get any more," his wife answered, "until I have found out whether coffee causes the trouble."—When the coffee was withdrawn from the daily bill of fare, the trouble in the head ceased. When the needs of a large family seemed to require that coffee be supplied, she found that coffee made of wheat-bran mixed thick in molasses and scorched, with a little real coffee added for flavoring, made a drink quite as acceptable to the family as the old coffee of full strength. But none of her children drink even this, and we were agreed in believing that they will never regret not having accustomed themselves to coffee in their early years. I feel sorry for the